New England

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Research Shapes New England's Economy

Part I — AGRICULTURAL RESEARCH

Farmers today are bountifully producing for a population 22 per cent greater than in 1940 and at a price that allows the consumer to enjoy a constantly improving diet while spending only 25 cents out of every dollar for food.

Meanwhile, the agricultural labor force has shrunk over 20 per cent, thus providing workers for the production of other goods and services that are constantly improving our standard of living.

Agricultural research in New England has played a significant part in these national developments as well as being a major force in shaping our New England agricultural economy. Research findings in New England have included hybrid corn, scores of new vegetable varieties, and a whole series of discoveries that have helped make possible the development of a poultry industry that brought in over $237 million in 1954 to New England farmers. (*Continued on Page 2*)

Also | **Construction Outlook in New England, *Page 4*. Planning for Floods in New England, Part II — Federal Programs, *Page 5*. New Minimum Raises Wages in New England, *Page 8*.**

New England Leads the Way

In the years immediately preceding the Civil War, a few people began to realize that scientific principles could be applied to American agriculture.

The Sheffield School at Yale, for instance, was founded in 1847 with the teaching of agricultural chemistry as one of its prime functions. Business and civic groups also made efforts to strengthen agriculture by promoting various educational programs.

But American farmers proved to have a voracious appetite for knowledge. In fact, the demand was so great that the relatively meager forces of the educators could not begin to handle the task adequately.

At this point New England came forth with a leader in the person of United States Senator Justin Morrill of Vermont. He sponsored the Morrill Act of 1862 which led to the establishment of the land-grant colleges of which state agricultural colleges are a part. This same Morrill Act was the first formal recognition by any society that agriculture and engineering could and should be widely taught in our colleges and universities.

Farmers, business leaders, and teachers of agriculture alike soon realized that organized agricultural research was almost nonexistent. It was evident, too, that the many small farming units could never carry on an adequate research program.

The Connecticut legislature led the way this time with the establishment of the first agricultural research center in America in Middletown in 1875. This station was later moved to New Haven.

The national Congress acted in 1887 to pass the Hatch Act which authorized the setting up of publicly supported agricultural research stations at each of the state agricultural colleges. Thus, organized agricultural research was born, supported by public funds and, maybe even more important, tied in closely with the educational institutions that would disseminate the information learned.

Today there are seven agricultural experiment stations in New England, including the six that are located at the state agricultural colleges as well as the station at New Haven, Connecticut. During the last fiscal year the expenditures by these seven stations totaled nearly four million dollars and there were over 1,150 people on their payrolls.

Research Shapes Our Economy

Over the years the findings of these New England agricultural research centers have been a tremendous force in shaping the New England economy. The development of the poultry industry is an outstanding example.

Following World War I, many farmers in New England were casting about for some new type of agricultural enterprise which would increase their economic returns.

Meanwhile, researchers had been steadily unlocking one door after another that would allow the poultry industry to develop in this area. Their efforts, plus the leadership of the infant industry itself, soon gave wide circulation to the idea that a poultry enterprise could be profitable.

Not all of these research findings that allowed the poultry industry to expand were made in New England, but an impressive array of them were. Late in the 1800's, Rhode Island poultrymen had started the development of a new strain of chickens. Rhode Island State College of Agriculture recognized the potential value of the strain and it was a leader in refining and purifying the bloodlines to the point where a new breed was established. The Rhode Island Red was the premier laying bird of her day and is still a highly popular breed.

Other developments were needed and they were fast to follow. The invention of the incubator was not a product of New England genius, but it was a major factor in permitting expansion of the poultry industry. New England researchers swung open the gates again when the Connecticut station at New Haven demonstrated that birds could be raised in confinement without ever seeing sunlight if their feed was properly reenforced with Vitamin D. This discovery, which incidentally cost less than $1,000 in research funds, made poultry a source of year-round income.

Then the Massachusetts poultry geneticists started their long succession of discoveries that helped to lick "broodiness," the mother instinct that kept hens sitting on their eggs rather than busying themselves in producing more. These were only a few of the long line of discoveries by the Massachusetts station.

By the early 1920's the poultry researchers at the University of New Hampshire, working with poultry breeders in that state, had developed the New Hampshire breed, the backbone of today's tremendous broiler industry. In fact, New Englanders claim that the first carload of broilers ever sent to New York City was shipped from Durham, New Hampshire, where they had been raised by students.

As the industry began to develop, however, it met with one obstacle after another. First was pullorum, the dread disease that wiped out young chicks. Connecticut pathologists first proved that it was carried from the mother hen through the egg to the baby chick, and they evolved a blood test that located the disease in the hens. Here the New Hampshire station joined the fight and assisted in setting up a field method of control that has resulted in almost complete elimination of the disease.

By the 1930's the efficient teams of poultry research men at the agricultural experiment stations had proved their ability to meet problems as they arose. Since that time they have made major contributions in the development of controls for such

diseases as coccidiosis, bronchitis, and "crazy chick" disease, to mention only a few.

There were many discoveries, too, that opened up new possibilities for efficiency. The development of the so-called high-energy rations by the station at Storrs, Connecticut, is a case in point. This one discovery can be demonstrated to have reduced production costs over five million dollars in 1955 alone on the broilers raised in New England.

Today poultry is the major source of agricultural income in Maine, New Hampshire, Massachusetts and Connecticut and a sizable income-producer in Rhode Island and Vermont. Leadership in efficiency of egg production is amply demonstrated by the fact that the six New England states are consistently among the top seven in the nation in eggs produced per bird.

Early Research Important

Some of the early fundamental agricultural research was of tremendous importance and without it modern farming would be severely handicapped. For instance, scientists at the Storrs station in the late 1800's proved that legumes had the ability to take nitrogen from the air. This basic discovery showed conclusively the importance of legumes in hay and pasture seeding mixtures.

Other early findings included the discovery of many of the essential amino acids by the Connecticut station at New Haven and their place in both human and animal nutrition.

The gypsy moth was introduced into Massachusetts in 1869 by people who thought that it had possibilities in the production of silk. It soon got loose and became a tremendous menace to shade trees and ornamental shrubs. In the course of bringing it under control, entomologists at the Massachusetts station discovered lead arsenate as an insecticide — one of the most widely used insecticides in history.

Rhode Island discovered in the late 1800's that lack of lime in the soil was a severely limiting factor in crop production on New England's mineral soils. Since that time millions of tons have been used to correct soil acidity.

The station at New Haven brought hybrid corn to the world in 1917. The increased vigor from hybridization had been recognized earlier, but Dr. D. F. Jones and his associates at New Haven developed a practical method of producing hybrid seed. This discovery alone raised yields per acre by 15 per cent and is estimated to have produced millions of dollars in new wealth. In fact, this single piece of research has more than paid for the operation of the nation's agricultural research stations for all of the years that they have been in existence.

There are hundreds of other examples of the benefits of agricultural research, each of which has benefited consumers through less expensive food, saving many times the total cost of operating the institutions where they originated.

The New Hampshire Agricultural Experiment Station has done particularly good work in recent years in developing vegetable and fruit varieties that are tailor-made to fit the New England climate. These varieties have found wide use by both home gardeners and commercial truck gardeners. Since the 1930's the New Hampshire station has released a steady stream of varieties such as New Hampshire midget watermelons, Durham raspberries, Double-rich tomatoes and Bush Buttercup squash.

Vermont has been one of the leaders in dairy production research. Researchers in this state, which supplies 70 per cent of the milk for the Boston market, have come up with a string of triumphs which increase efficiency in the production of milk.

Among the most famous research at Vermont is the work of Carter and Hitchcock. These two economists, early in the 1940's, made the first widespread studies of the application of time and motion studies to agriculture. Stimulated by the war-induced shortage of labor, these men went to work and found labor-saving techniques for dairy barn chores — the most time-consuming job on the farm. They soon gained converts because the research was timely and they were able to prove that the time required to milk a typical dairy herd could be cut nearly in half by the application of the known principles of work simplification. Later this work was expanded to include the harvesting of roughage.

One outstanding achievement of the Vermont station was in the conservation of nutrients in farm manure. These nutrients were valued at upwards of four million dollars annually in Vermont alone and at least one-fourth of this amount, mainly nitrogen, was lost into the air and through leaching by water. The discovery of using superphosphate with the manure was widely accepted, and by 1952 had eliminated at least one-half of this million-dollar loss to Vermont farmers.

As one might expect, the Maine station has been a leader in potato research. It has turned out a steady succession of discoveries vital to the health of the Maine potato industry which produces over 15 per cent of the total national crop. In cooperation with the United States Department of Agriculture it has developed several important potato varieties including the Katahdin, the most widely planted variety in the Northeast today.

The early discovery of potato ring rot and the development of control measures are estimated to have saved one and one-half million dollars annually, nearly three times the budget of the Maine Agricultural Experiment Station.

The work in potato marketing has also been of major importance. The Maine station has developed methods of potato washing, the use of

plastic containers, and presently is testing both chemicals and irradiation as a means of sprout inhibition. Recently they have developed potato pulp for livestock feed as a by-product of the potato-starch industry.

In many cases the research stations have pooled their efforts. One of the outstanding pieces of regional research is the development of the formula which determines the price of fluid milk for the Boston market. This formula is acknowledged by farmers, milk handlers and consumers alike to have been an especially effective tool in the setting of prices that accurately reflect supply and demand. This is only one example of an increasing volume of agricultural research that is conducted on a regional basis.

Toward a Better Living

Thus, agricultural research at New England's state colleges of agriculture has played a major role both in shaping the New England economy and in strengthening the various agricultural enterprises of the region. The results of this research have been, and will continue to be, a notable raising of the standard of living of farm families. But equally important, the efficiencies introduced into agriculture through research have meant a constantly improving diet for a growing number of consumers. In addition, the resources of labor and capital resulting from the decreased needs of agriculture have, in turn, been available to industry for the development of the highest standard of living in the world.

Construction Outlook in New England

Last fall housing accomplishments for the year in New England seemed to merit the designation of a home-building spree. With the coming of spring it is time to reappraise the construction outlook, paying special attention to accomplishments in nonresidential fields of construction.

The extent to which New England truck gardens, pastures and orchards are sprouting new homes is indicated by F. W. Dodge Corp. statistical reports. These show contracts for $605 million of residential construction awarded during 1955 in the region. This was a six per cent increase over the preceding year, and provided over 45,000 new dwelling units, almost all of one-family type. High incomes, the desire for new homes, and availability of mortgage credit on easy terms were instrumental in stimulating this unusual pace of home-building. Declining residential construction awards revealed the slowdown in pace as the year approached its close. Yet, in the first two months of 1956 residential construction contract awards in the region surged to a volume 11 per cent greater than that for the corresponding period of 1955.

Mortgage credit played a most important role in the demand of these new homes. Under strong credit demand some lending institutions approached mortgage lending limits, and some shortages of available funds developed. In New England the flow of funds to savings institutions surpassed the 1954 rate, in contrast to the national experience, and no serious shortage arose, although interest rates on conventional mortgages rose slightly and terms were tightened.

Whether or not the recent rate of expansion in home-building can be long sustained, a high level of total construction activity seems to be assured because of the growing importance of nonresidential types of construction. Total 1955 contracts for nonresidential buildings in New England were six per cent greater than those for 1954. Included in this comparison are a 24 per cent contract expansion for commercial buildings, a 15 per cent expansion for manufacturing buildings, and a 35 per cent expansion for religious buildings. The $99 million contracts awarded in 1955 for construction of New England manufacturing buildings represent an investment of about $66 for each manufacturing employee in the area. Finally it is interesting to note that the rate of expansion for nonresidential building is accelerating. Contract awards of this type for the first two months of 1956 were 31 per cent greater than those for the two months of 1955.

In the field of public works, New England construction contracts were 88 per cent greater in 1955 than in 1954. For the first two months of 1956 there was still a gain of 26 per cent over a year earlier in such contracts.

All these comparisons demonstrate how an expansion in the residential part of a community generates needs for new shops, new schools, new churches, new roads, and other public facilities.

The outlook for construction in 1956 is generally regarded as promising. Higher costs are likely, under pressure of rising wages and shortages of some building materials. Supplies of mortgage funds at favorable rates should be sufficient for New England's needs and for some channeling to other regions. Zoning restrictions and high development costs may limit lower priced housing. Maintenance of 1955 volume of housing starts may not be possible in 1956, but the region's total new construction activity is generally expected to surpass that of 1955. Needs and plans for new schools, shops, plants, roads and public facilities are immense. And there is growing awareness of the opportunities for improvements, repairs and maintenance to existing structures to combat the blight which so often infects older communities.

Planning for Floods in New England

PART II — FEDERAL PROGRAMS

A large number of federal engineering, scientific, financial, and service organizations have some responsibility for alleviating flood disaster problems. Their duties can be classified as relief and rehabilitation work, flood forecasting, and flood control.

Relief and Rehabilitation

The Federal Civil Defense Administration finances and coordinates most of the flood relief work, but other federal agencies have important operating responsibilities in this field. The Corps of Engineers of the United States Army spent approximately $24 million in New England in removing flood debris and wreckage and in making or financing repairs to essential community facilities after the August 1955 flood. The Office of Defense Mobilization, the Farmers Home Administration, and the Small Business Administration arranged for over $35 million of emergency loans to flooded business firms and individuals in 1955.

Other agencies also helped. The Agricultural Marketing Service gave out surplus food for flood refugees, and the Business and Defense Services Administration obtained machine tools and other equipment from government stockpiles to speed the recovery of plants having defense contracts. The Bureau of Public Roads helped coordinate, supervise, and finance the reconstruction of flood-damaged roads and the Coast Guard carried out rescue operations. The Federal Crop Insurance Corporation paid about $430,000 for crop losses in the two New England counties (Hartford County, Connecticut, and Hampshire County, Massachusetts) where its experimental crop insurance program is being conducted.

Despite the existence of these federal disaster programs there is no organized method for industry and for most individuals to recoup their flood losses. Destitute individuals can receive financial help for rebuilding from the Red Cross; corporations and some individuals can obtain a limited amount of tax relief; and the farmers participating in the experimental crop insurance program are reimbursed for destroyed crops. Nevertheless, most businesses and individuals have had to bear almost all of the financial burden of rebuilding themselves.

To fill this gap, Congress is now considering several bills providing for an experimental flood insurance program. Unfortunately, owners of high flood risk properties are likely to be the ones most interested in flood insurance and it is doubtful that they would be able or willing to pay the premiums required to make such an insurance program self-sustaining. For that reason, if a flood insurance program is inaugurated, it will probably require a sizable government subsidy.

Flood Forecasting

Much flood damage can be avoided if people living and working on the flood plains can be forewarned that a flood is imminent. Then they can move business inventories and personal possessions to a higher or safer location.

In New England, flood predictions are usually based on actual rainfall, snow depth, and thaw information. The Weather Bureau is now setting up a regional flood forecasting center at Windsor Locks, Connecticut, where professional hydrologists will make flood forecasts based upon data sent to them from weather stations scattered over all of New England. In most cases, their predictions will be relayed by the Weather Bureau over police teletype circuits. This forecast center will not be in operation over the entire region until 1957, but it is already working for the Connecticut River Valley and much of southern New England.

Flood Control

Since 1936 the Corps of Engineers has been the government agency responsible for building major flood control structures. The Corps has made numerous surveys of the flood control problem in New England and has recommended a system of reservoirs, dikes, and channel improvements. Although Congress has authorized construction of most of the Corps' program, local and state opposition to land acquisition for reservoir sites and the failure of some New England communities to supply the land and rights-of-way for local protection works have been important factors in holding up appropriations. As a result only 22 per cent of the program authorized by Congress has been constructed here as opposed to 45 per cent for the country as a whole. However, recent devastating floods have awakened public interest in the Corps' program and state and local opposition have given way to active cooperation. In addition, Congress recently appropriated planning or construction funds for 14 new projects in New England.

Flood control projects are expensive in this region as compared with other parts of the country. Good reservoir sites in the critical areas are scarce; large ones are seldom available except at prohibitive cost. As a result, the economies involved in constructing very large storage dams or multiple-purpose power and flood control dams usually cannot be realized. Moreover, most river valleys in New England are short and narrow and the cost of each flood control

project must be charged off against a smaller valley area than is the usual case in other regions.

On the other hand, flood control benefits are large in some parts of New England where much valuable property is concentrated on the flood plain. Thus the Corps of Engineers has submitted economic justifications for numerous projects in the Connecticut River Basin, but no projects have been recommended in the state of Maine.

The Corps claims that its construction program in New England, when completed, will prevent about 60 per cent of the estimated 32 million dollars of average annual flood damage which would occur if there were no flood control projects. The Corps also states that about ten million dollars of this damage is being prevented by flood control structures it has already completed.

The following paragraphs and the accompanying map summarize the federal flood control construction program in New England's major river basins.

Blackstone River: To date no flood control structures have been built in this river basin. The Corps has proposed four projects, however, and Congress has recently appropriated planning or construction funds for two of these — the Woonsocket Channel Improvement and the Worcester Diversion projects. If and when all four are completed, the Corps estimates that they will prevent 45 per cent of the average annual flood damage which would occur if there were no control structures.

Connecticut River: This is New England's largest river and it also produces the most flood damage. About 70 per cent of the past flood losses in this basin have occurred on the main stem of the river between Holyoke, Massachusetts, and Hartford, Connecticut. Although the nine local protection projects in this area have been completed, only five of the 26 proposed upstream storage reservoirs have been built. If all these projects were completed, a flood several feet higher than the maximum flood of record during the last 300 years would be contained on the main stem of the Connecticut. However, if a flood of this magnitude should occur today, the local protection dikes at Northampton, Holyoke, Chicopee and Springfield would be overtopped and the devastation would be extreme.

The Corps of Engineers claims that its construction program, when completed, will eliminate about 65 per cent of the estimated 16 million dollars of average annual flood damage which would occur if there were no flood protection works in this river basin.

Housatonic River: To date, the Corps has justified economically only one project in this watershed. But the Corps claims that this one structure — the Thomaston Dam on the Naugatuck River — would have prevented damage amounting to 77 million dollars or about one-third of the total damage in the entire Housatonic basin during the flooding of August 1955.

Hoosic River: The two channel improvement projects in this basin will protect North Adams and Adams against a flood somewhat larger than the maximum recorded flood in recent history.

Merrimack River: The federal program in this basin is in a state of flux because the states of New Hampshire and Massachusetts have not yet come to an agreement in an interstate compact as to how flood control can best be accomplished. However, the Corps of Engineers has advocated two key projects. One, the Hopkinton-Everett Dam, is a large single-purpose storage project. The other, the Livermore Falls project, is a large flood control and power dam located on the tributary Pemigewasset. The Corps is not actually recommending the latter project until suitable arrangements are made to solve the pollution and inundation problems which would be created if the dam were constructed.

When and if these two projects are completed, the main stem of the river will have a high degree of flood control.

Otter Creek: The Rutland local protection project is the only one the Corps has recommended for construction in this basin.

Thames River: The Corps of Engineers estimates that its completed construction program will prevent about 65 per cent of the average annual flood damage in this basin.

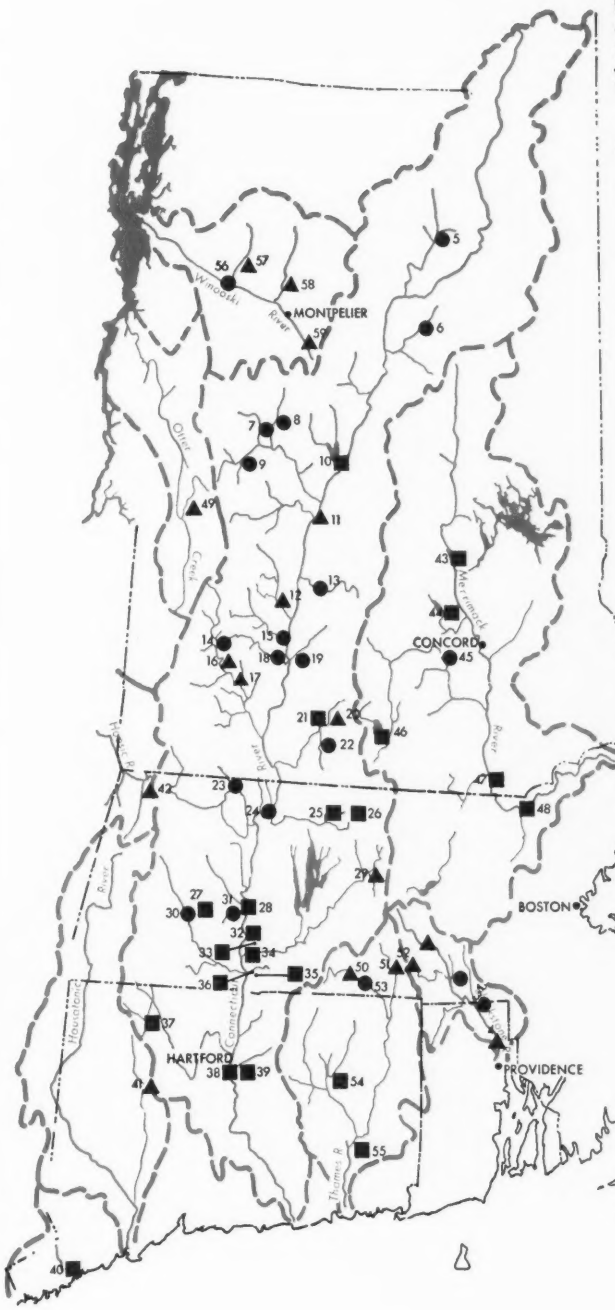
Winooski River: Proposed construction in this basin includes rebuilding the spillways of three dams which were not originally designed to withstand the very highest flooding levels.

The Corps' completed projects are now preventing much flood damage. Proposed projects would almost double the effectiveness of the federal flood control program. It should be pointed out, however, that about 55 per cent of the average annual flood damage which now occurs in New England cannot be economically prevented by the construction of additional storage reservoirs, dikes and channel improvements.

The Corps of Engineers cannot justify projects on many small streams. Also, much property is located outside of local protection works and near waterways where flooding will occur occasionally after all the federal structures are completed. In addition, local protection works do not guarantee one hundred per cent protection. The Corps usually designs its structures to contain a flood somewhat larger than the maximum flood of record, but it cannot justify building so much protection that any city or town can never be inundated.

Thus living near any waterway, even when it is protected by federal flood control works, involves a calculated risk.

FEDERAL FLOOD CONTROL PROJECTS IN NEW ENGLAND



■ COMPLETED PROJECTS
▲ PROJECTS FOR WHICH CONGRESS HAS APPROPRIATED CONSTRUCTION OR PLANNING FUNDS
● OTHER AUTHORIZED OR RECOMMENDED PROJECTS
RIVER BASIN BOUNDARIES

BLACKSTONE RIVER BASIN
1 Worcester Diversion Project ▲
2 West Hill Dam ●
3 Woonsocket Channel Improvement ●
4 Pawtucket Local Protection ▲

CONNECTICUT RIVER BASIN
5 Victory Dam ●
6 Sugar Hill Dam Alternate ●
7 Randolph Dam ●
8 South Randolph Dam ●
9 Gaysville Dam ●
10 Union Village Dam ■
11 North Hartland Dam ▲
12 North Springfield Dam ▲
13 Claremont Dam ●
14 The Island Dam ●
15 Brockway Dam ●
16 Ball Mountain Dam ▲
17 Townshend Dam ▲
18 Cambridgeport Dam ●
19 Cold River Dam ●
20 Otter Brook Dam ▲
21 Surry Mountain Dam ■
22 Honey Hill Dam ●
23 Fort Morrison Dam ●
24 Falls River Dam ●
25 Tully Dam ■
26 Birch Hill Dam ■
27 Knightsville Dam ■
28 Northampton Local Protection ■
29 Barre Falls Dam ▲
30 Littleville Dam ●
31 Easthampton Dam ●
32 Holyoke Local Protection ■
33 Holyoke (Springdale) Local Protection ■
34 Chicopee Local Protection ■
35 Springfield Local Protection ■
36 West Springfield Local Protection Projects ■
37 Winsted Channel Improvement ■
38 Hartford Local Protection ■
39 East Hartford Local Protection ■

CONNECTICUT COASTAL AREA
40 Norwalk Channel Improvement ■

HOUSATONIC RIVER BASIN
41 Thomaston Dam ▲

HOOSIC RIVER BASIN
42 Adams and North Adams Channel Improvement ▲

MERRIMACK RIVER BASIN
43 Franklin Falls Dam ■
44 Blackwater Dam ■
45 Hopkinton - Everett Dam ●
46 Edward MacDowell Dam ■
47 Nashua Local Protection ■
48 Lowell Local Protection ■

OTTER CREEK BASIN
49 Rutland Local Protection ▲

THAMES RIVER BASIN
50 East Brimfield Dam ▲
51 Buffumville Dam ▲
52 Hodges Village Dam ▲
53 Westville Dam ●
54 Mansfield Hollow Dam ■
55 Norwich Channel Improvement ■

WINOOSKI RIVER BASIN
56 Waterbury Local Protection ●
57 Waterbury Dam Modification ▲
58 Wrightsville Dam Modification ▲
59 East Barre Dam Modification ▲

NOTE: NO FLOOD CONTROL PROJECTS IN MAINE.

New Minimum Raises Wages in N. E.

March 1 was pay raise day for thousands of New England workers. On that day the new minimum wage of $1 an hour became effective for wage and salaried employees covered by the Fair Labor Standards Act. Increases ranged up to 25 cents an hour for some workers. Thousands of other workers are expected to receive wage boosts to maintain traditional wage differentials and to enable firms in exempt industries to attract employees.

In New England approximately 1,883,000 workers are employed in jobs subject to the provisions of the minimum wage law. About three-fourths of these are in manufacturing. Because of the great reliance of the region on manufacturing for its well-being, the relative impact of increased wage costs on this segment of industry is especially important. The U. S. Department of Labor's most recent estimate indicated that 9.2 per cent of the region's factory workers were earning less than $1 an hour in April 1954. After taking into consideration the increase in manufacturing employment and wage adjustments since that time, it is estimated that close to 115,000 production workers in New England factories received wage boosts when the higher minimum wage became effective.

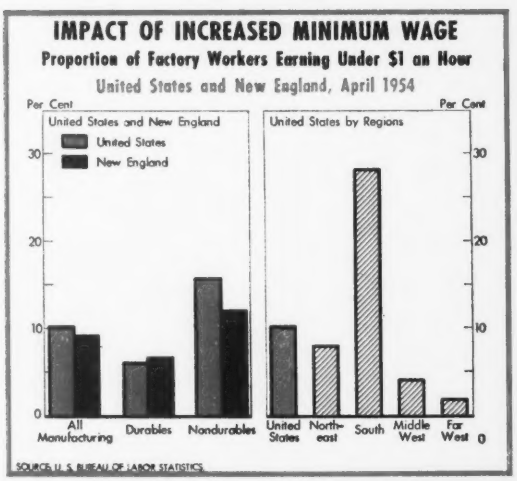
The proportion of manufacturing workers who were earning less than $1 an hour was slightly smaller in New England than in the nation as a whole and only about a third as high as the relative number of southern workers in this wage category.

Both durable- and nondurable-goods industries had some workers who benefited directly from the change in the minimum wage, but the greatest effect in New England was in nondurables. A substantial share of the work force of the following industries previously earned under $1 an hour: cigar manufacturing, 43 per cent; costume jewelry, over 30 per cent; shoes and leather products, about 25 per cent; men's and boys' dress shirts, 22 per cent; and wood household furniture, 18 per cent.

About ten per cent of manufacturing workers in the United States earned less than the new minimum, with the southern textile, apparel, and lumber industries accounting for the largest proportions of low-wage workers. Nationally, the industry groups with the highest relative number of workers earning less than the new minimum were lumber and wood products, 32 per cent; leather and leather products, 26 per cent; textiles and apparel, 23 per cent; tobacco manufacturing, 21.5 per cent; and food and related products, 17 per cent.

In textiles less than one per cent of New England workers in the cotton and synthetic branch of the industry were earning less than $1 but close to 15 per cent of the industry workers in the Southeast were earning less than that amount.

As a result of the increase in the minimum wage, about 2,100,000 of the 24 million United States workers covered by the Fair Labor Standards Act received increases averaging 13 cents an hour. This added an estimated $560 million to annual payrolls. Anticipated wage increases to other workers will add additional millions to the nation's wage bills. No estimates of the added wage costs to New England employers are available but it is certain that the adoption of the new minimum wage will add substantially to the income stream in the region. The relative impact on income in New England, however, will not be as great as in the nation because, even among that group of workers directly affected by the increase, a much higher proportion was concentrated just below the new minimum.

Besides fattening pay envelopes, the raising of the minimum wage is expected to have other important results. Some employers expect to cut overtime work in order to limit wage cost increases; layoffs of less efficient workers and more careful hiring procedures may be adopted. Some marginal producers may find it necessary to curtail production. Higher wage costs will foster a more rapid introduction of automatic machinery by some companies. Some firms, especially in the industries most affected by the wage hike, have already announced price increases for their products.

As far as New Englanders are concerned, however, one of the most important effects of the higher minimum wage will be the reduction in the regional wage differential between New England and the South, especially in those industries in which the regions are competitive. This reduction in the wage advantage enjoyed by southern plants may well slow the rate of interregional industry displacement, especially in the textile industry.